Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

a new monotypic genus (*Exogone*), which the author refers to the Rhizinaceae; the material on which the new genus is based was found growing on partially decayed leaves of cabbage.—T. MAKINO (Bot. Mag. Tokyo **23**:59–75. 1909) in continuation of his studies on the flora of Japan describes several new species and proposes a new monotypic genus (*Ortherodendron*) of the Celastraceae, based on *Elaeodendron japonicum* Franch. & Sav.—W. SUKATSCHEFF (Jour. Bot. St. Pétersb. **3**:124–136. 1908) gives an account of an alga recently discovered in Lake Lunoevo, Russia, for which the author proposes the generic name *Lunoevia;* illustrations supplement the description.—V. L. KOMAROV (Acta Hort. Petrop. **29**:179–362. *pls. 5–20.* 1909) presents a monographic treatment of the genus Caragana, in which 56 species are recognized, 27 being new to science; the genus has its distribution through central Asia and China.—E. B. COPELAND (Phil. Jour. Sci. **4**:1–64. *pls. 1–21.* 1909), in an article entitled "Ferns of the Malay-Asiatic region, part I," including all families of ferns for the region except Hymenophyllaceae and Polypodiaceae, recognizes 22 genera, to which are referred 196 species. The genus Cyathea dominates, being there represented by 101 species. Each genus is illustrated by reproduced photographs, but from rather fragmentary material.—C. B. ROBINSON (*ibid.* 69–105) records for the Philippine Islands three species of the Chloranthaceae, of which one is new, and some 55 species of the section Phyllanthinae of the Euphorbiaceae, of which 21 are new to science.—R. MUSCHLER (Bot. Jahrb. **43**:1–74. 1909), under the title "Sytematische und pflanzengeographische Gliederung der afrikanischen Senecio-Arten," presents a detailed consideration of the genus, as it pertains to Africa, recognizing about 500 species, 28 of which are here described for the first time.—H. D. HOUSE (Ann. N. Y. Acad. Sci. **18**:181–263. 1908) presents a monographic treatment of the North American species of Ipomoea, in which 175 species and several varieties are recognized, 30 being new. The author gives concise keys, rather full synonomy, and numerous citations of well-known series of exsiccatae, thus making a very useful synopsis for the identification of material of this group. The revision excludes Operculina, Quamoclit, Exogonium, Calonyction, Turbina, and Rivea.—P. C. STANDLEY (Muhlenbergia **5**:81–87. 1909) has described 5 new species of Castilleja from the southwest.—E. O. WOOTEN and P. C. STANDLEY (*ibid.* 87) describe a new species of Lathyrus from New Mexico.—J. M. GREENMAN.

Cytology of a Drosera hybrid.—Since the preliminary announcement of ROSENBERG'S work on the hybrid *Drosera longifolia*×*rotundifolia*, cytologists have awaited with some impatience the more detailed account, which has now appeared.[3] Besides giving a comparative study of the external features of the two parents and their hybrid, the present paper describes the behavior of the chromosomes in critical phases of the life-history of both parents, and gives an extended account of the chromosomes of the hybrid.

---

[3] ROSENBERG, O., Cytologische und morphologische Studien über *Drosera longifolia*×*rotundifolia.* Kungl. Svenska Vetenskapsakad. Handl. **43**:1–64. *pls. 1–4.* 1909.

In *D. longifolia* there are 40 chromosomes in the nuclei of the sporophyte and 20 in those of the gametophyte, while in *D. rotundifolia* the numbers are 20 and 10 respectively. The chromosomes of *D. rotundifolia* are somewhat smaller, as well as less numerous. The behavior of the chromatin in a hybrid between two such forms is naturally of some importance.

In the hybrid, called *D. obovata*, the nuclei of the sporophyte show regularly 30 chromosomes, the anticipated number, but in the nuclei of spore mother cells the condition is unique. At the metaphase of the heterotypic mitosis in the pollen mother cell there appear 10 double chromosomes, presumably resulting from the pairing of 10 chromosomes of *D. longifolia* with the 10 of *D. rotundifolia.* Besides, there are 10 smaller single chromosomes, presumably belonging to *D. longifolia.* These 10 smaller chromosomes are irregularly distributed; some enter the daughter nucleus at the close of this mitosis, while others remain in the cytoplasm and may organize small nuclei, as in the well-known case of Hemerocallis. The behavior at the second mitosis is similar. The four spores of the pollen tetrad stick together, so that it is possible to determine the entire number of chromosomes in the four nuclei. Counting the chromosomes in the four nuclei and including those of the dwarf nuclei, the number is about 60. In any given spore the number ranges from 10 to 15, with 14 the most frequent. In a preliminary paper, ROSENBERG concluded that two of the spores of a tetrad belonged to *D. longifolia* and two to *D. rotundifolia.* This conclusion is now withdrawn, and differences in the size of spores is attributed to differences in the number of chromosomes. Sometimes a generative cell is formed, but usually the contents of the spore begin to disorganize before this stage is reached. At the time of shedding, the pollen grain has a normal exine, but the contents are usually dead.

In the formation of four megaspores from the mother cell the behavior is very similar to that just described. Occasionally, there is a well-developed embryo sac, but in most cases disorganization begins before the four-nucleate stage is reached.

ROSENBERG crossed the hybrid *D. obovata* with *D. longifolia*, and while usually there was no result, he obtained a few embryos. These contained at least 33 chromosomes, and in one case 37 were counted. The theoretical number would be 35.

The principal conclusions are (1) that the chromosome is an individual organ of the cell, and (2) reduction of chromosomes is brought about by a fusion of the chromosomes of the two parents.—CHARLES J. CHAMBERLAIN.

Mildew on Alchemilla species.—STEINER[4] has published an interesting paper on the specialization of *Sphaerotheca Humuli* (DC.) Burr on various species of Alchemilla. In addition to finding that the mildew on Alchemilla is confined to species of this genus, he also claims to be able to distinguish "minor biological species" within this genus of host plants. For example, conidia

---

[4] STEINER, J. A., Die Spezialization der Alchemillen-bewohnenden *Sphaerotheca Humuli* (DC.) Burr. Centralbl. f. Bakt. etc. 21^2:677–726. 1908.